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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,438	12/18/2001	Yimin Niu	RR-1752	3278
24501	7590	12/14/2004	EXAMINER	
MARK A LAUER 6601 KOLL CENTER PARKWAY SUITE 245 PLEASANTON, CA 94566			MILLER, BRIAN E	
			ART UNIT	PAPER NUMBER
			2652	

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/024,438	Applicant(s) NIU ET AL.	
	Examiner Brian E. Miller	Art Unit 2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-25 is/are pending in the application.
4a) Of the above claim(s) 13 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-6, 8-12, 16-22, 24-25 is/are rejected.
- 7) ☒ Claim(s) 7, 14 and 23 is/are objected to.
- 8) ☒ Claim(s) 1 and 3-25 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Claims 1, 3-25 are now pending.

Election/Restrictions

1. Applicant's election without traverse of Species (9), FIGs. 16-18, in the reply filed on 7/14/04 is acknowledged.
2. Claims 13 & 15 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 7/14/04.

Claim Objections

3. Claim 12 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Newly amended claim 11 appears to include all the language of claim 12. Claim 12 should be appropriately canceled to obviate this objection.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "first piece includes a frame that at least partly encircles said second piece," as recited in claim 3, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing

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sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 5, 9-12, 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kurihara et al (6,587,313). Kurihara et al discloses an apparatus for reading or writing information on a medium, the apparatus (referring mainly to FIGs. 2-3) including: (as per claims 1 & 11) a body 104 having a center of mass, a surface (unnumbered-top surface of slider

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attached to body 200a of microactuator 200), and an electromagnetic transducer 109; an actuator 200 disposed adjacent the surface and including a first piece 200c (stator); a plurality of deformable elements 200b coupled to the first piece; a second piece 200a (rotor) coupled to the deformable elements; wherein each of the deformable elements have a shape that changes in response to a signal to rotate the second piece relative to the first piece about an axis of rotation F2 (see col. 8, lines 15-19); wherein a distance between one of the deformable elements and the axis of rotation is less than a length of the deformable element (evident from FIG. 3), and a distance between the transducer 109 (which is on the tip of the slider) and the axis of rotation is at least several times greater than the distance between the deformable element and the axis of rotation (again, evident from the FIGs.); (as per claims 2 & 12) wherein the second piece 200a is coupled to the body so that the axis of rotation is substantially aligned with the center of mass (see col. 6, lines 58-59); (as per claim 5) wherein each deformable element extends between the first and second piece and a length is at least several times larger than a distance between the deformable element and the axis of rotation; (as per claim 9) wherein a suspension 108a is coupled to the first piece and includes a fulcrum that is aligned with the axis of rotation (see col. 6, lines 56-59); (as per claims 10 & 17) a conductive adhesive layer 108h which is considered to have inherent damping characteristics, adjoins second piece 200a to the actuator (see col. 7, lines 58-62); (as per claim 16) wherein the axis of rotation of the rotor is substantially fixed relative to the stator, as would follow from the known operation of a stator and rotor structure; (as per claim 18) a thin piece of material (unnumbered FIG. 5) in the central region thereof, which is considered to have damping characteristics, adjoins the two deformable elements.

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7. Claims 1, 3, 5-6, 8-12, 16-22, 24-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Soeno et al (US 6,246,552). Soeno et al discloses a discloses an apparatus for reading or writing information on a medium, the apparatus (referring mainly to FIGs. 4 & 5, and also 6, 10, 18) including: (as per claims 1, 11 & 19-20) a body 2 having a center of mass, a surface (unnumbered-though apparent from the figures), and an electromagnetic transducer 1; an actuator 4 disposed adjacent the surface and including a first piece 43 (stator/frame); a plurality of deformable elements 41/45 coupled to the first piece; a second piece 44 (rotor/movable element) coupled to the deformable elements; wherein each of the deformable elements have a shape that changes in response to a signal to rotate the second piece relative to the first piece about an axis of rotation (see col. 19, lines 52-67); wherein a distance between one of the deformable elements and the axis of rotation is less than a length of the deformable element (evident from the FIGs.), and a distance between the transducer 1 (which is on the tip of the slider) and the axis of rotation is at least several times greater than the distance between the deformable element and the axis of rotation (again, evident from the FIGs.); (as per claims 1 & 11/12) wherein the second piece 4 is coupled to the body so that the axis of rotation is *substantially* aligned with the center of mass (see at least FIG. 4); (as per claim 3) wherein the first piece 43 includes a frame that encircles the second piece 44; (as per claims 5 & 21) wherein each deformable element extends between the first and second piece and a length is at least several times larger than a distance between the deformable element and the axis of rotation; (as per claims 6 & 22) wherein the second piece/movable member 44 extends outward from the center of rotation an extent that is at least several times larger than a distance between the deformable elements and the axis of rotation (as is evident from the FIGs.); (as per claims 8 &

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24) wherein the deformable elements 411a,b and/or 412a,b has material disposed contiguously between the frame 43 and the movable element 44 along a straight line aligned with the axis of rotation (see FIG. 6 or 10); (as per claims 9 & 25) wherein a suspension 3 is coupled to the first piece and includes a fulcrum (shown in FIGs. 18A-18B) that is substantially aligned with the axis of rotation (see also col. 27, lines 35+); (as per claims 10 & 17) a bonding adhesive layer (see col. 17, line 5 and col 11, lines 38-50) which is considered to have inherent damping characteristics, adjoins second piece 44 to the slider; (as per claim 16) wherein the axis of rotation of the rotor is substantially fixed relative to the stator, as would follow from the known operation of a stator and rotor structure; (as per claim 18) the material of 44 which is considered to have damping characteristics adjoins the two (or more) deformable elements.

Allowable Subject Matter

8. Claims 7, 14 & 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Amendment

9. Applicant's arguments filed 5/4/04 have been fully considered but they are not persuasive.

A...Applicants' assert (beginning on last line of page 8 in the "Remarks" section, that "It is clear from Fig. 3 of Kurihara, however, that only one of the "spiral arms 200b" is coupled to the "tip end 200c," in contrast to claim 1."

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In response, the Examiner considers the term “coupled” to be a very broad term and maintains that the plurality of spiral arms (deformable elements) 200b along with body 200a would be “coupled” to the tip end (first piece) 200c, as required by the claim(s).

B...Applicants’ further submit on page 9, with respect to Kurihara that “attachment portion 108a” is not a surface of “slider 104,” in contrast to claim 1.

The Examiner acknowledges this apparent oversight, however, it is clear that the top surface of slider (not labeled) is attached to microactuator portion 200a, thus meeting the claim language.

C...Applicants’ assert, with respect to Soeno and claims 1 & 11, that Soeno does not disclose the limitation of “said second piece is coupled to said body so that said axis of rotation is substantially aligned with said center of mass.”

This is found unpersuasive. It is maintained that Soeno meets this limitation, at least by FIG. 4, i.e., since “coupled” and “substantially aligned” do not necessitate exact positioning of the second piece.

D...Applicants’ further submit “that Soeno does not disclose the additional limitations of both claim 3 and claim 4.” This is moot, because the Examiner never asserted this position.

E...With respect to claim 8, Applicants’ submit that Soeno does not disclose that “one of said deformable elements has material disposed contiguously between said first piece and said second piece along a straight line aligned with said axis of rotation.”

The Examiner points to FIG. 6 or 10 that show this claimed feature (see also col. 20, lines 19-27).

F...With respect to claim 9, Applicants’ contend that “Soeno does not disclose ‘a suspension...including a fulcrum that is substantially aligned with the axis of rotations.’”

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This feature is also considered to be encompassed by Soeno. FIGs. 18A-18B of Soeno, including a gimbal (fulcrum) would be utilized as known in a traditional sense (see col. 27, line 35+) coupled with FIG. 4(for example) which would be necessarily “substantially aligned with the axis of rotation,” to operate properly.

G...With respect to claims 10 & 18, applicants’ disagree with the Office Action assertion that Soeno discloses “a bonding adhesive layer (see col. 17, line 5) which is considered to have inherent damping characteristics.”

The Examiner maintains that the bonding as disclosed in Soeno is a typical adhesive bond (see also col. 11, lines 38-50), therefore, would have inherent damping characteristics, as previously asserted.

H...Comments directed to claims 13-15 are moot as well, since claims 13 & 15 have been withdrawn from consideration and claim 14 has been indicated as allowable.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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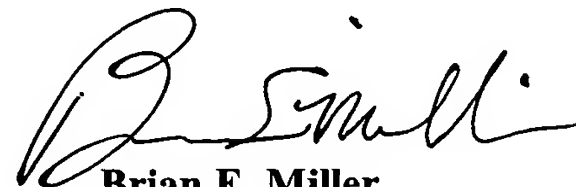
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian E. Miller whose telephone number is (703) 308-2850. The examiner can normally be reached on M-TH 7:15am-4:45pm (and every other friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Brian E. Miller
Primary Examiner
Art Unit 2652

BEM
December 10, 2004